

REMARKS

This Preliminary Amendment is filed in conjunction with a Request for Continued Examination. An Advisory Action was mailed July 19, 2006 maintaining the rejections set forth in the final Official Action mailed April 5, 2006. Claims 1-16 and 18-25 are currently pending. The Examiner rejects Claims 1-16 and 18-25 under 35 U.S.C. § 103(a) as being unpatentable over the admitted state of the prior art in view of U.S. Patent No. 5,893,683 to Johnson, U.S. Patent Application Publication No. 20020168241 to David et al., and U.S. Patent Application Publication No. 20050015980 to Kottilingam et al.

Applicants have amended independent Claims 1 and 13 to further patentably distinguish the cited references. Dependent Claims 6 and 19 have been amended for clarification. Therefore, in light of the claim amendments and subsequent remarks, Applicants respectfully request reconsideration and allowance of the claims.

Independent Claim 1 recites routing a portion of the workpiece including the defect such that routing removes the defect and at least a portion of the workpiece proximate to the defect. The routing step includes controlling a depth to which the workpiece is routed with a micro-stop countersink apparatus, wherein routing further comprises controlling the routing such that at least a portion of the routed portion of the workpiece is defined by a sidewall and a conical bottom surface extending angularly from the sidewall. Independent Claim 13 recites that the router bit contacts the defect and the area proximate to the defect in a direction generally orthogonal to the workpiece to remove the defect and at least a portion of the workpiece proximate to the defect. Moreover, independent Claim 13 recites that the routed portion is defined by a sidewall extending generally orthogonal to the workpiece and a conical bottom surface extending from the sidewall.

Independent Claims 1 and 13 have been amended to recite that the routing is performed with a router bit that comprises at least one cutting edge having a shallow relief angle for defining a conical bottom surface. Thus, as shown in Figure 3 of the present application, each cutting edge has a relief angle A that defines the conical bottom surface 22 depicted in Figure 7. As stated in the specification of the present application, “[r]outing using a small relief angle A ensures that a minimal amount of area 18 proximal to the defect 12 is removed.” Page 8, lines

24-25. In addition, the shallow relief angle (e.g., between 0 and 3 degrees) ensures that a minimal amount of material is removed during routing, which is unlike the cited references.

Applicants respectfully submit that none of the cited references discloses routing a workpiece with a router bit including at least one cutting edge having a shallow relief angle for defining the conical bottom surface, as recited by independent Claims 1 and 13. Applicants refer to the previous Amendments filed October 14, 2005 and February 20, 2006 for a brief discussion of the Johnson, David, and Kottilingam references. Johnson does not disclose a relief angle at all, as the routed portion of Johnson defines a flat bottom surface. Moreover, the area removed by the router of Johnson is substantially larger than the shallow cut of the claimed invention. Furthermore, even though Kottilingam discloses a conical shaped groove, there is no teaching or suggestion as to a cutting edge and associated relief angle for forming the groove. Even assuming for argument that Kottilingam suggests a cutting edge having a relief angle, there is no teaching or suggestion as to the configuration of the cutting edge (i.e., a cutting edge having a shallow relief angle). David also does not disclose the specific configuration of the router cutting edges and whether the router cutting edges include relief angles. Since none of the cited references discloses that routing is performed with a router bit including at least one cutting edge having a shallow relief angle for defining a conical bottom surface, no combination of the references discloses a router bit that includes at least one cutting edge having a shallow relief angle for defining a conical bottom surface.

Therefore, the rejections of independent Claims 1 and 13 under 35 U.S.C. § 103(a) over the cited references are overcome. As such, it is submitted that the pending dependent claims are allowable for at least those reasons discussed above with respect to independent Claims 1 and 13, respectively.

Moreover, dependent Claims 6 and 19 have been amended to recite that each cutting edge includes a relief angle of between 0 and 3 degrees. In the Advisory Action, the Examiner indicated that with respect to dependent Claims 6 and 19, even if Johnson failed to disclose a relief angle, Claims 6 and 19 recited a relief angle of less than 3 degrees, such that a relief angle of 0 degrees also met the requirements of the claims. As such, Applicants have amended Claims 6 and 19 for clarification.

Applicants respectfully submit that none of the cited references, taken alone or in combination, teaches or suggests dependent Claims 6 and 19, which recite that a router bit includes at least one cutting edge having a relief angle of between 0 and 3 degrees. As stated above, neither Johnson nor David discloses a router bit including cutting edges having associated relief angles, while even assuming that Kottilingam discloses a relief angle, Kottilingam does not disclose a shallow relief angle or a particular magnitude of the relief angle. Therefore, Applicant submits that amended dependent Claims 6 and 19 are further distinguishable from the cited references.

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CONCLUSION

In view of the amendments and remarks presented above, Applicants submit that the present application is in condition for allowance. As such, the issuance of a Notice of Allowance is therefore respectfully requested. In order to expedite the examination of the present application, the Examiner is encouraged to contact Applicants' undersigned attorney in order to resolve any remaining issues.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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